THE TEPHRITIDAE AND OTITIDAE OF THE BAHAMA ISLANDS (DIPTERA)

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The purpose of the present paper is to record a series of Tephritidae and Otitidae collected by the Van Voast-American Museum of Natural History expedition to the Bahama Islands in 1952 and 1953, and to present a complete list of the species in each of these two families so far known to occur, or likely to be found, in the Bahamas.

Of the 17 species of Tephritidae discussed herein, 2 are new to science, 2 have been recorded only from Florida, 2 have a purely Nearctic distribution, 10 are distributed widely over North, Central, and South America and the West Indies, and 1 is a typical South American species. Only 5 have previously been reported from the Bahama Islands. Benjamin (U. S. Dept. Agric. Tech. Bull. No. 401, 1934) discusses in some detail the nomenclature, morphological characters, and distribution of 11 of these tephritids; his paper is drawn upon heavily for data contained herein.

Nine of the 15 species of Otitidae occurring in the Bahamas have been recorded from Florida; all but 1 of these also occur in other states. Five species have purely West Indian, Central or South American distributions, and one is described as new. Only two of the 15 species have been previously recorded from the Bahamas. The absence of distribution records in this family in many cases is probably a reflection of lack of intensive study. Curran (Amer. Mus. Novit. No. 812, 1935) has furnished the most recent key to the species of the genus *Euxesta*. There is no recent revisionary work devoted to the family Otitidae as a whole in the Americas.

The list of Johnson (Psyche **15**: 69–80, 1908) has long served as the only guide to the Diptera occurring in the Bahamas; all 1904 records in this paper are quoted from his list. Knab and Yothers' (Jour. Agric. Res. 2 (6) : 447–453, 1914) Bahama rec-

ord of *Toxotrypana curvicauda* Gerst. is the only addition to these two families known to me. It is rather surprising that the study of the faunas of these two families has been neglected to such an extent on this island chain.

In the following treatment the first synonymical reference for each species is to the original description; other entries are limited to the more important sources of information about the taxonomy of the species concerned and to its occurrence in the Bahamas. Nearly all specimens seen in this study, unless otherwise noted, were collected by E. B. Hayden, G. B. Rabb, and L. Giovannoli. Most of the material, including holotypes and some paratypes of each of the new species, has been deposited in the American Museum of Natural History.

I wish to extend thanks to Dr. Mont A. Cazier and Dr. C. H. Curran, American Museum of Natural History, for providing the bulk of the material for study, and to Mr. George Steyskal for his advice on *Euxesta luteocesta,* n. sp.

The "Distribution" portion of each species treatment includes records available from the literature or available elsewhere previous to the Expedition, as well as those received from the American Museum of Natural History for identification.

Family TEPHRITIDAE

Toxotrypana curvicauda Gerstäcker

Toxotrypana curvicauda Gerstäcker, 1860, Ent. Ztg. Stettin 21 (46) : 194, pl. 2; Knab and Yothers, 1914, Jour. Agr. Res. 2 (6) : 447 *et seq.*, pl. 41, figs. 1 and 2; pl. 42, figs. 1–4.

DISTRIBUTION.—No material was collected from this study. The species has been previously recorded from New Providence, where it was reared from papaya by Knab and Yothers.

This distinctive species has a very wide distribution in tropical America which probably coincides with its host plant, *Carica papaya* L. Aczél (Acta Zool. Lilloana 7: 181, 1949) lists the following localities from which the species has been recorded: St. John, Antigua (an error repeated again and again in the literature; it refers to the island of St. Jean, Danish West Indies, according to Knab and Yothers); Bahamas (see below); Puerto Rico; Mexico (Yucatan); Costa Rica; Peru; Brazil; United States (South Carolina, Florida, Texas).

Genus *Anastrepha* Schiner

No species of *Anastrepha* have ever been recorded from the Bahama Islands. There is a possibility, however, that *mombinpraeoptans* Seín may actually occur and that its presence has remained undetected because collecting dates have not coincided with peaks of abundance, or because fruit has rarely been carefully investigated. *A. mombinpraeoptans* occurs throughout the Greater and Lesser Antilles and in Florida.

Two other species occurring in Florida but having more restricted distribution in the West Indies are *suspensa* (Loew) and *ocresia* (Walker). These are less likely to occur in the Bahamas than is *mombinpraeoptans,* but the possibility does exist and should be taken into account during future entomological exploration of these islands.

Xanthaciura connexionis Benjamin

Xanthaciura connexionis Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 45; fig. 32.

DISTRIBUTION.—Abaco Cays: 2 ♂♂, 1 ♀, Allen's Cay, 9 May 1953; 1 ♀, Great Sale Cay, 10 May 1953; 5 ♂♂, 2 ♀♀, Bennett's Harbor, Cat Island, 24 March 1953; 1 ♂, Landrail Point, Crooked Island, 5 March 1953; Eleuthera Island: 1 ♂, Governor's Harbor, 31 March 1953; 2 ♂♂, New Portsmouth (Rock Sound). 28 March 1953; 1 ♂, Fish Cay (south of Fortune Isl. or Long Cay); 8 March 1953; 1 ♂, Eight-mile Rock, Grand Bahamas Island; 14 May 1953; 1 ♂, 1 ♀, Marsh Harbor, Great Abaco Island; 6 May 1953; 1 ♀, near Abraham Bay, Mayaguana Island; 3 March 1953; New Providence Island: 1 ♀, Nassau, 16 April 1953; 1 ♀, 2 mi. E. Nassau, 14 April 1953.

This species is present throughout southern Florida, and especially abundant in the southern tip of that state.

Xanthaciura insecta (Loew)

Trypeta insecta Loew, 1862, Smiths. Misc. Collect. 6 (1): 72; Tab. III, fig. 8.

Aciura insecta; Johnson, 1908, Psyche 15: 78.

Xanthaciura insecta; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 44; fig. 31.

DISTRIBUTION.—8 ♂♂, 1 ♀, Allan's Cay, Abaco Cays; 9 May

1953; Andros Island: 1 ♂, 1 ♀, Fresh Creek; 23 April 1953; 2 ♀♀, Mangrove Cay, 19 June 1924 (C. E. Olson); Berry Islands: 2 ♂♂, 2 ♀♀, Frazier's Hog Cay, 30 April 1953; 16 ♂♂, 21 ♀♀, Little Harbor Cay, 1 May 1953; Eleuthera Island: 2 ♀♀, Hatchet Bay (near Alicetown), 2 April 1953; 12 ♂♂, 6 ♀♀, Governor's Harbor, 31 March 1953; 1 ♂, 1 ♀, New Portsmouth (Rock Sound), 28 March 1953; Grand Bahamas Island: 1 ♂, Pine Ridge (at light), 13 May 1953; 5 ♂♂, 3 ♀♀, West End, 12 May 1953; 10 ♂♂, 12 ♀♀, Marsh Harbor, Great Abaco Island; 6 May 1953; New Providence Island: 11 ♂♂, 5 ♀♀, Nassau, 16 April 1953; 4 ♂♂, 4 ♀♀, 2 mi. E. Nassau, 14 April 1953; 1 ♂, 5 mi. W. Nassau, 6 April 1953; 3 ♂♂, near Windsor Field, 12 April 1953; 1 ♀, near Cockburn Town, San Salvador Island; 18 March 1953; 2 ♀♀, So. Bimini Island; 20 August 1951 (C. & P. Vaurie). Previously recorded from United States (Florida), Bermuda, Jamaica, Cuba, Puerto Rico, Mexico, Costa Rica, Honduras, and Mangrove Cay, Andros Island (1 August 1904).

DISCUSSION.—The specimens seen in this study agree very well with Benjamin's excellent description and illustrations. The distal spot in the first posterior cell varies in shape and is rarely completely round. In every specimen I have examined, the fourth hyaline spot (counted from the wing base) on the posterior margin of the wing is fainter than any of the others in the row.

Xanthaciura tetraspina (Phillips)

Aciura (*Eucosmoptera*) *tetraspina* Phillips, 1923, Jour. N. Y. Ent. Soc. 31: 132.

Xanthaciura tetraspina; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. 401: 46; fig. 33.

DISTRIBUTION.—1 ♂, nr. Abraham Bay, Mayaguana Island, 3 March 1953.

Previously recorded from Missouri, Indiana, Texas, and Florida (south to Orlando).

Acinia fucata (Fabricius)

Musca fucata Fabricius, 1792, Ent. Syst., p. 359.

Acinia fucata; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 48; fig. 34.

DISTRIBUTION.—4 ♀♀, 4 ♂♂, Nassau, New Providence Island,

June, 1956 (N. L. H. Krauss) ; 1 ♀, near Cockburn Town, San Salvador Island; 18 March 1953.

The species occurs in North, Central, and South America, and the West Indies. In the United States it ranges from New Jersey to Florida (Jacksonville to Key West).

Acrotaenia trisignata, new species
(Figure 1)

A greyish yellow pollinose species. The wing has only three black costal spots, the basal one occupying the entire stigma. Ill-defined triangular hyaline incisions are present on the apical third of the wing posteriorly.

FEMALE. Head yellowish except for eyes, which are black, and a very small dark spot between eye and base of antenna. Eye 0.85 times as high as head; frons at vertex about 1.6 times as wide as one eye, frons widening only very slightly from vertex to frontal suture; face concave and projecting forward sharply just below tip of third antennal segment. Inner and outer verticals, postoculars, posterior upper frontoorbitals, cheek setae and cheek bristle yellowish-white; ocellars, anterior pair of upper frontoorbitals and all lower frontoorbitals dark brown; inner verticals, upper and lower frontoorbitals all in a line parallel with inner border of eye. Antenna yellow, apex of third segment rounded; arista rather stout and yellow on basal fourth, distal three-fourths comparatively slender, dark brown.

Mesonotum heavily grey pollinose with five long, faintly differentiated yellowish pollinose stripes extending from front of prescutellum, the middle three stripes nearly attaining scutellum; pleura, sternum, and scutellum heavily pollinose; dorsocentrals very close to the suture and situated on the outer borders of the grey areas adjacent to central stripe; achrosticals situated in the centers of these grey areas; scutellum heavily grey pollinose; two pairs of scutellars, the apical pair about 0.8 times as long as basal; presutural, anterior supraalar, postalar, dorsocentral, achrostical and scutellars each arising from a distinct black spot. Anterior coxa yellowish pollinose and some pollinosity on other coxae, remainder of legs uniformly shining yellow except for a small, ill-defined brownish spot on ventral surfaces of mid and hind femora.

Wing (fig. 1) with three large black spots on costa, and basal spot extending through stigma to second vein, the middle spot somewhat exceeding second vein, the distal spot confined to the marginal cell; area of small hyaline spots on wing disc extending along costa halfway from distal black spot to end of second vein, and terminated across outer third of wing by a narrow but more or less continuous hyaline area; an additional narrow hyaline area extending from posterior border well into first posterior cell just distad of posterior crossvein. Halter pale yellow.

Abdomen yellow pollinose, approximately the same color as mesonotum, tergites II, III, and IV each with an ill-defined brown spot on each side of center line; sternites concolorous with tergites; ovipositor sheath glistening brownish yellow, distinctly browner on basal third than on apical two-

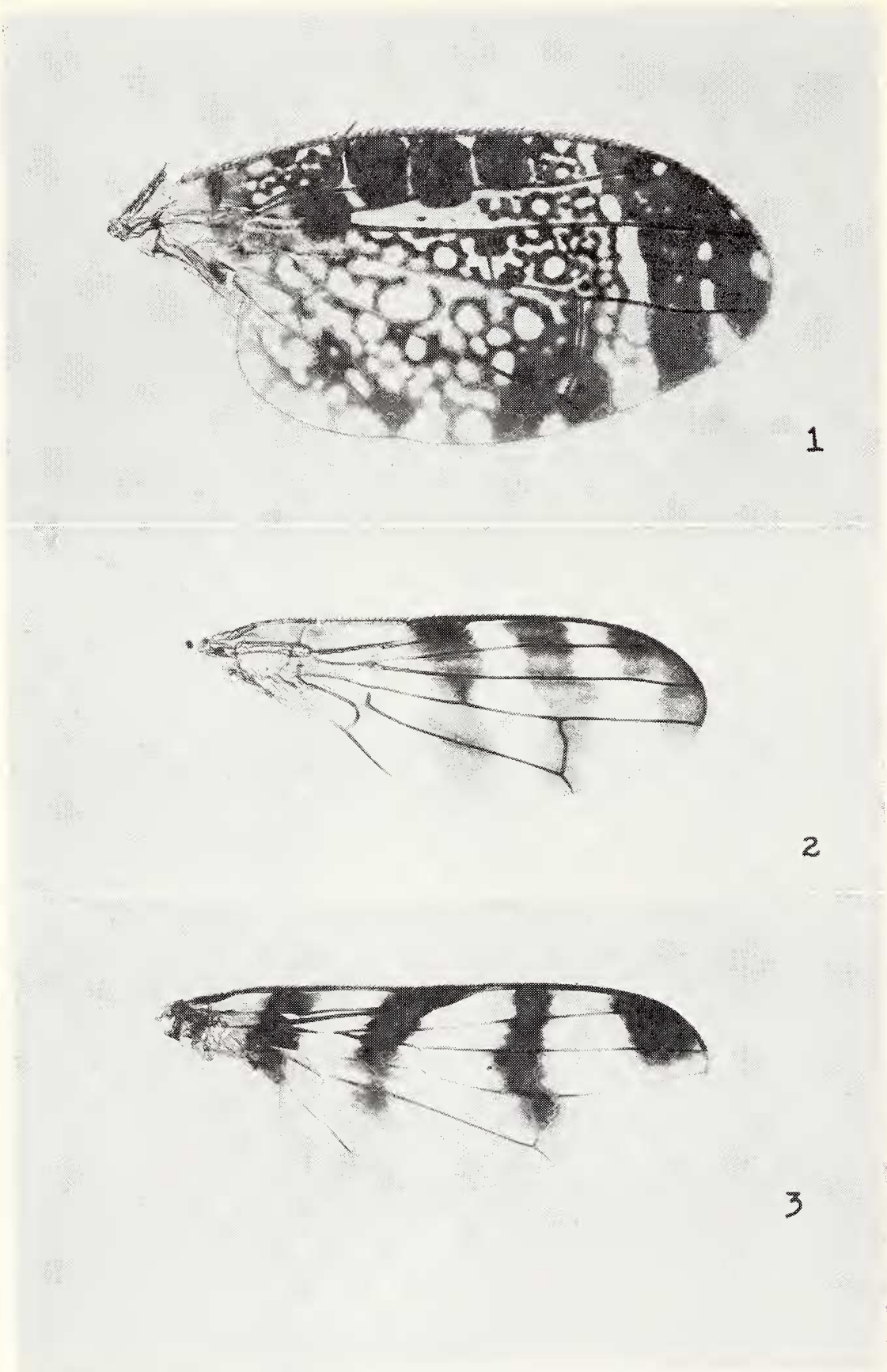

FIG. 1. Wing of *Acrotaenia trisignata*. FIG. 2. Wing of *Urophora trivirgulata*. FIG. 3. Wing of *Euxesta luteocesta*.

thirds, the extreme tip black; ovipositor brownish yellow, approximately 1.6 times as long as sheath (estimated from partially infolded position).

MALE. Unknown.

TYPE.—Holotype ♀, Fresh Creek, Andros Island, Bahamas Islands, 23 April 1953, E. B. Hayden and L. Giovannoli, collectors.

DISCUSSION.—There is no doubt that this female belongs to a new species because it is so easily distinguished from the other two New World *Acrotoxa* with large, distinct black costal spots, *otopappi* Doane and *testudinea* Loew. *A. otopappi* has at least four dark costal spots, two of which lie within the stigma, and the light spot at the end of the second vein attains the third vein. *A. trisignata* is alone in having a single, well-defined hyaline area on the posterior apical third of the wing. *A. otopappi* appears to be restricted to Mexico, while *testudinea* inhabits the westernmost islands of the West Indies.

Icterica atacta Hendel

Icterica atacta Hendel, 1914, Abh. Ber. Konigl. Zool. Anthrop.-Ethnogr. Mus. Dresden 14: 62; Pl. 3, fig. 51.

DISTRIBUTION.—1 ♀, 2 mi. E. Nassau, New Providence Island; 14 April 1953.

The species has also been recorded from Paraguay.

DISCUSSION.—Obviously a rare species, since most workers refer to Hendel's original description without adding new locality records.

Urophora trivirgulata, new species
(Figure 2)

Easily distinguished from all known species in the genus by the presence of only three dark transverse bands on the wing.

FEMALE.—Head yellow except for eyes and ocellar triangle, which are black; lunule, antennae and face distinctly lighter yellow than front or cheeks. Eye 0.6 times as high as head; front at vertex 1.4 times as wide as one eye, parallel-sided from vertex to frontal suture; face depressed rather deeply on each side of center line to form an antennal fovea; cheek very wide and irregularly roughened. All head hairs black; one pair of upper frontoorbitals, two or three pairs of lower frontoorbitals with fine but well differentiated hairs between them but in the same line, and in line with upper frontoorbital. Third antennal segment rounded apically. Mouth parts yellow, geniculate, the labellar portion one-half as long as head.

Mesonotum black pollinose, entire surface covered by short, slender black hairs, dorsocentrals in an imaginary line extending between the supraalars;

pleura mostly black pollinose but somewhat shiny, as is the scutellum; a narrow line along the dorsal margin of mesopleuron and lower half of humeral callus yellow; scutellum black and much more lightly pollinose than mesonotum; two pairs of scutellars, all about the same length. Mid and hind coxae lightly black pollinose over a yellow ground color, fore coxae and remaining portions of all legs entirely yellow.

Base of wing (fig. 2) hyaline, three dark bands at right angles to the longitudinal axis of the wing; the proximal of these nearly filling the stigma, enclosing the anterior crossvein, and continuing to the posterior margin; second band parallel with the proximal, separated from it by a hyaline area as wide as the proximal band, unbroken from costa to posterior wing margin and enclosing the posterior crossvein; distal band lying diagonally across wing apex, with an irregular inner margin extending from a point on costa anterior to end of second vein to a point on posterior border about one-third the distance between terminations of fourth and fifth veins; middle and apical bands completely separated in all except one male, in which they are joined in marginal cell. Halter light yellow.

Abdominal tergites I, II and III the same color and density of pollinosity as the mesonotum, tergites IV and V somewhat blackish pollinose, but with the suggestion of a metallic green tinge which is absent in the preceding tergites; sternites with the same pollinosity and color as the thoracic pleural sclerites; ovipositor sheath about as long as tergites I through VI taken together, broad at base, tapering to a rather narrow tube at mid-point, the distal half parallel-sided.

MALE.—As in female with the exception of the usual sexual differences. Tergites of abdominal segments I, II and III as in female; tergite of segment IV as long as the first three combined, with metallic green reflections as in the female, subshining; tergite of segment V shining black.

Types.—Holotype ♀, Great Sale Cay, Abaco Cays, Bahama Islands, 10 May 1953, E. B. Hayden and G. B. Rabb, collectors. Paratypes: 4 ♂♂, 1♀, same data as holotype; 1 ♂, 1 ♀ paratype retained in the collection of the U. S. National Museum.

Dioxyna picciola (Bigot)

Acinia picciola Bigot, 1857, in Sagra, Hist. Fis., Pol. and Nat. Cuba, 2nd Pt., Hist. Nat., 1856, 7: 347; pl. 20, fig. 10.

Ensina picciola; Johnson, 1908, Psyche 15: 78.

Paroxyna picciola; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 42; fig. 30.

Dioxyna picciola; Munro, 1957, Ruwenzori Exped., 1934–35, Brit. Mus. 2 (9): 937; figs. 51, 52, 53f.

DISTRIBUTION.—Abaco Cays: 72 ♂♂, 40 ♀♀, Allen's Cay, 9 May 1953; 21 ♂♂, 20 ♀♀, Elbow Cay, Hope Town, 4 May 1953; Andros

Island; 43 ♂♂, 16 ♀♀, Fresh Creek, 23 April 1953; 18 ♂♂, 4 ♀♀, Lisbon Creek (near South Bight), 28 April 1953; 8 ♂♂, 4 ♀♀, Mangrove Cay, 26 April 1953; Berry Islands: 36 ♂♂, 23 ♀♀, Frazier's Hog Cay, 30 April 1953; 67 ♂♂, 29 ♀♀, Little Harbor Cay, 1 May 1953; 1 ♂, The Bight, Cat Island, 22 March 1953; Eleuthera Island: 40 ♂♂, 30 ♀♀, Governor's Harbor, 31 March 1953; 37 ♂♂, 31 ♀♀, Hatchet Bay (near Alicetown), 2 April 1953; 46 ♂♂, 20 ♀♀, James Cistern, 1 April 1953; 38 ♂♂, 19 ♀♀, New Portsmouth (Rock Sound), 28 March 1953; Exuma Cays: 1 ♂, Big Farmer's Cay, 13 January 1953; 1 ♂, Darby Island, 18 January 1953; 5 ♂♂, Little Farmer's Cay, 17 January 1953; Grand Bahamas Island: 8 ♂♂, 7 ♀♀, Pine Ridge (at light), 13 May 1953; 30 ♂♂, 31 ♀♀, West End, 12 May 1953; 71 ♂♂, 34 ♀♀, Marsh Harbor, Great Abaco Island; 6 May 1953; Long Island: 1 ♂, Clarence Town, 13 March, 1953; 1 ♂, Deadman's Cay, 11 March 1953; 3 ♂♂, 5 ♀♀, near Abraham Cay, Mayaguana Island; 3 March 1953; New Providence Island: 42 ♂♂, 23 ♀♀, Nassau, 16 April 1953; 82 ♂♂, 38 ♀♀, 2 mi. E. Nassau, 14 April 1953; 5 ♂♂, 4 ♀♀, 5 mi. W. Nassau, 6 April 1953; 10 ♂♂, 3 ♀♀, near Windsor Field, 12 April 1953; North Bimini Island: 11 ♂♂, 7 ♀♀, Alicetown, 30 December 1952; 2 ♂♂, Hatchet Bay (near Alicetown), 2 April 1955; 10 ♂♂, 3 ♀♀, near Port Nelson, Rum Cay; 16 March 1953; 4 ♂♂, 2 ♀♀, near Cockburn Town, San Salvador Island; 18 March 1953; 3 ♀♀, South Bimini Island; 20 August 1951 (C. & P. Vaurie); 1 ♂, Grand Turk Island, 19 February 1953.

This widespread species has been collected from many localities in the West Indies and is the most frequently encountered Nearctic member of the genus. It is by far the most common tephritid in this study.

DISCUSSION.—Benjamin has adequately described and figured the species. However, some of the specimens seen in this study differ from that illustrated by Benjamin in that the distal spot in the marginal cell varies greatly in size and position. In some of them this spot is entirely absent, in some it is fused with the middle spot, and in others, it is separate and very small. I have seen many combinations in the specimens before me.

Hardy and Adachi have adopted the name *Stylia* Robineau-Desvoidy, 1830, for this genus. Dr. E. M. Hering (1954, Bonner Zoologisches Beiträge, 5: 167) designated *bidentis,* an originally

included species as type of *Stylia* and indicated that the name *Paroxyna* is a synonym. It is the feeling of Dr. H. K. Munro (*in litt.*) who has examined specimens of *bidentis,* that Robineau-Desvoidy had in mind a *Myopites* rather than a *Paroxyna* concept. I prefer to retain the name *Paroxyna* until the matter is settled by those to whom the Robineau-Desvoidy specimens are available for examination. Munro, in 1957, revised the genus and clarified many records of this species formerly attributed to *sororcula* (Wied.)

Euaresta bella (Lowe)

Trypeta bella Loew, 1862, Smiths. Misc. Collect. 6 (1) : 88.
Euaresta bella; Johnson, 1908, Psyche 15 : 78; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401 : 50, fig. 35; Quisenberry, 1950, Jour. N. Y. Ent. Soc. 58 : 34, figs. 2B, 3G and 3J.

DISTRIBUTION.—4 ♂♂, 1 ♀, Nassau, New Providence Island; 16 April 1953; previously reported from Andros Island (Mangrove Cay) and New Providence Island (Nassau) (4 specimens, 28 June and 1 August 1904).

This is the most widespread member of the genus in North America, having been recorded in the United States from 29 States and the District of Columbia. It also occurs in Canada and Mexico.

DISCUSSION.—Benjamin and Quisenberry have adequately described and discussed the morphological features of this species.

Dyseuaresta mexicana (Wiedmann)

Trypeta mexicana Wiedemann, 1830, Auss. Zweifl. Ins. II : 511.
Euaresta melanogaster (Loew); Johnson, 1908, Psyche 15 : 78.
Dyseuaresta mexicana; Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401 : 51; fig. 36.

DISTRIBUTION.—2 ♂♂, 1 ♀, Allen's Cay, Abaco Cays; 9 May 1953; 2 ♂♂, Mangrove Cay, Andros Island; 26 April 1953; 3 ♂♂ 1 ♀, Little Harbor Cay, Berry Islands; 1 May 1953; Cat Island: 1 ♀, Bennett's Harbour, 24 March 1953; 1 ♂, 1 ♀, The Bight, 22 March 1953; 1 ♀, McQueen, 23 January 1953; Eleuthera Island: 17 ♂♂, 7 ♀♀, Governor's Harbor, 31 March 1953; 1 ♀, James Cistern, 1 April 1953; 7 ♂♂, 5 ♀♀, New Portsmouth (Rock Sound), 28 March 1953; 1 ♂, West End, Grand Bahama Island; 12 May 1953; Long Island: 1 ♀, Clarence Town, 13 March 1953;

3 ♂♂, 1 ♀, Deadman's Cay, 11 March 1953; 16 ♂♂, 12 ♀♀, Alicetown, North Bimini Island; 30 December 1952; New Providence Island: 1 ♀, Nassau, 16 April 1953; 10 ♂♂, 9 ♀♀, Nassau, 5 May 1953; 4 ♂♂, 2 mi. E. Nassau, 14 April 1953; 2 ♂♂, 7 ♀♀, South Bimini Island; 20 August 1951 (C. & P. Vaurie).

This species occurs in the United States from Texas to Florida and has been collected in Mexico, St. Vincent, Puerto Rico, Cuba, Venezuela, and Paraguay.

DISCUSSION.—Benjamin has adequately described and figured this species. The genus may be distinguished from North American species of the genus *Euaresta,* which it closely resembles, by the single pair of scutellars inserted near the base of the scutellum and by the absence of striations on the distal surfaces of the male claspers.

Trupanea actinobola (Loew)

Trypeta actinobola Loew, 1873, Smiths. Misc. Collect. 11 (256): 326; ibid., p. 330, assigned to the genus *Urellia.*

Trupanea (*Trupanea*) *actinobola;* Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 56; fig. 41.

DISTRIBUTION.—1 ♂, Pine Ridge, Grand Bahama Island; 13 May 1953.

Inhabits the eastern United States and occurs in Texas and California.

DISCUSSION.—Although Benjamin regards *actinobola* as a species complex, the single specimen from the Bahamas agrees well with the Florida material seen and described by him. The Texas and California records cited by him may prove to belong to one or more different species.

Trupanea dacetoptera Phillips

Trypanea dacetoptera Phillips, 1923, Jour. N. Y. Ent. Soc. 31: 148, fig. 59; Malloch, 1942, Proc. U. S. Nat. Mus. 92 (3133): 14, fig. 1t.

Trupanea (*Trupanea*) *dacetoptera;* Benjamin, 1934, U. S. Dept. Agric. Tech. Bull. No. 401: 54; fig. 38.

DISTRIBUTION.—1 ♀, New Portsmouth (Rock Sound), Eleuthera Island; 28 March 1953; 2 ♀♀, South Caicos Island, 11 February 1953. Previously known only from Orlando, Florida.

DISCUSSION.—The three females seen in this study lack the connecting dark mark, or suggestion of it, shown by Benjamin,

Malloch, and Phillips to extend horizontally between the two dark marks in the discal cell. There is a distinct, rounded dark spot on the middle of the fifth vein.

Neotephritis abstersa (Loew)

Trypeta abstersa Loew, 1862, Dipt. Amer. Sept. Ind., Cent. II, p. 91 *in* Berl. Ent. Zeitschr. 6: 221.

Trupanea (*Euarestoides*) *abstersa;* Benjamin, 1934, U. S. Dept. Agr. Tech. Bull. No. 401: 58, fig. 43.

DISTRIBUTION.—1 ♂, Allen's Cay, Abaco Cays; 9 May 1953; 1 ♂, Drigg's Hill (near South Bight), Andros Island; 27 April 1953; 1 ♀, Frazier's Hog Cay, Berry Islands; 30 April 1953; 1 ♂, Bennett's Harbour, Cat Island, 24 March 1953; 1 ♂, Landrail Point, Crooked Island; 5 March 1953; 1 ♂, Warderick Wells Cay, Exuma Cays; 10 January 1953; 1 ♀, Matthew Town, Great Inagua Island; 31 January 1953; 1 ♀, Nassau, New Providence Island; 16 April 1953; 1 ♂, 1 ♀, Long Cay (so. of South Caicos Island), 10 February 1953; 1 ♂, Cays 3.5 mi. S.W. of North Caicos Island, 28 February 1953; 1 ♀, South Caicos Island, 11 February 1953.

Recorded from New England, Florida and Texas.

DISCUSSION.—Although slightly smaller than the Florida specimens in the collection of the U. S. National Museum, those seen in this study agree well with the description given by Benjamin, and the wing markings are fully as distinct as those in the Florida material.

Family OTITIDAE

Euxesta abdominalis Loew

Euxesta abdominalis Loew, 1867, Berl. Ent. Zeitschr. 11: 307, pl. 2, fig. 15; Johnson, 1908, Psyche 15: 78; Curran, 1935, Amer. Mus. Novit., No. 812, p. 10 (in key only).

DISTRIBUTION.—Alicetown, North Bimini Island; 1 ♂ July, 1951 (C. & P. Vaurie); 1 ♀, 30 December 1952; 2 ♂♂, South Bimini Island, June 1951 (C. & P. Vaurie).

Previously recorded from Nassau, New Providence Isl., 28 June 1904, and commonly encountered in Central America and the West Indies.

Euxesta annonae (Fabricius)

Musca annonae Fabricius, 1794, Ent. Syst. Ins. IV: 358.

Euxesta annonae; Johnson, 1908, Psyche 15: 78; Curran, 1935, Amer. Mus. Novit., No. 812, pp. 11 (in key only).

DISTRIBUTION.—Previously reported from Mangrove Cay, Andros Island, 1 August 1904. Widely distributed in South America and the West Indies, and occurs in Florida.

Euxesta basalis (Walker)

Ortalis basalis Walker, 1852, Ins. Saund., p. 373.

DISTRIBUTION.—1 ♂, South Bimini Island, July 1951 (Cazier & Gertsch). The species also occurs in Georgia and Florida.

Euxesta juncta Coquillett

Euxesta juncta Coquillet, 1899, Proc. Ent. Soc. Wash. 6: 95; Curran, 1935, Amer. Mus. Novit., No. 812, p. 10 (in key only).

DISTRIBUTION.—4 ♀♀, New Portsmouth (Rock Sound, Eleuthera Island; 28 March 1953; 1 ♀, West End, Grand Bahama Island; 12 May 1953; 3 ♀♀, Marsh Harbor, Great Abaco Island; 6 May 1953; 1 ♀, 5 mi. W. Nassau, New Providence Island; 6 April 1953. Previously known only from Nicaragua and Peru.

DISCUSSION.—This species possesses two light spots on the distal half of the wing, a rather unusual pattern for species in this genus.

Euxesta luteocesta, new species
(Figure 3)

This species lacks the velvety black spot between the antennae. It possesses four wing bands, none of which attains the posterior margin; a narrow yellow transverse band is present near the posterior border of the brown abdominal tergite III in the female; and narrow yellow bands are situated on the posterior borders of sternites I, II, and III of the male.

FEMALE.—Head mostly reddish pollinose except for a narrow silvery pollinose stripe on each side contiguous with eye; vertex and ocellar triangle black; face reddish pollinose except for a narrow shining brown band extending across face at level of tip of third antennal segment, this band separated from the oral margin by a reddish pollinose area narrower than the brown band. Frons at vertex 1.1 times as wide as one eye, scarcely narrowing at frontal suture; ocelli farther apart than the diameter of any one ocellus; black setae scattered irregularly over surface of frons. Antennae nearly attaining oral margin; third antennal segment reddish yellow except for a darkened anterior margin; arista dark brown.

Mesonotum blue with a slight bronze reflection, thinly dusted; pleural sclerites the same color but somewhat more shining; scutellum dark, shining bronze with a slight green reflection. Coxae, trochanters, femora, and

tibiae of all legs dark brown; knees and tarsomeres a somewhat lighter brown, the latter thickly set with short, black setae.

Wing (fig. 3) with four transverse dark bands as follows: the basal band extending from base of costal cell to a point near posterior border; the second band filling the stigma and distal eighth of costal cell, extending posterior just proximad of anterior crossvein and fading out in the third posterior cell; third band starting at costa, separated from end of stigma by a distance equivalent to width of that cell, extending posteriorly and ending on posterior crossvein about two-thirds of the distance along its length; fourth band a triangular spot with its posterior proximal corner situated just posterior to third vein. Halter yellowish white.

Abdominal tergites shining brown, tergite III with a narrow, contrasting yellow band across its entire width, situated close to the posterior border and leaving a very narrow dark brown area on the extreme posterior margin on each side of a shallow central emargination. Terminal tergite triangular, longer than width at base; abdominal sternites irregularly marked with yellow but tending to have narrowly yellow posterior margins, remaining portions of sternites the same color as tergites.

MALE.—As in the female, with the usual sexual differences. Tergites entirely dark brown, without yellow markings; posterior margins of abdominal sternites I, II and III with very narrow yellow bands.

TYPE.—Holotype, ♀, Leaf Cay, Allen's Cays, Exuma Cays, 7 January 1953, E. B. Hayden, collector. In A. M. N. H. Paratypes: 2 ♂♂, 1 ♂, same data as holotype; 1 ♀, East Bimini Island, June, 1951, P. & C. Vaurie, collectors; 1 ♂, South Bimini Island, June, 1951, M. Cazier and C. P. Vaurie, collectors; 1 ♂, South Bimini Island, July 20–31, 1951, C. & P. Vaurie, collectors; 1 ♂, South Bimini Island, Aug. 10–20, 1951, C. & P. Vaurie, collectors; 2 ♀♀, Great Bahama Island, Pine Ridge, May 13, 1953, E. B. Hayden, collector. In U. S. N. M. and A. M. N. H.

DISCUSSION.—This species runs unsatisfactorily in Curran's key (Insects of Porto Rico and the Virgin Islands, Diptera, 1928, p. 77) to *eluta* Loew, from which it may readily be separated by the yellow tergal band in the female and the somewhat different wing pattern. *E. luteocesta* runs to *quaternaria* in Curran's longer work (1935, p. 10), but the latter species is characterized by entirely yellow abdominal tergites I and II.

Euxesta notata (Wiedemann)

Ortalis notata Wiedemann, 1830, Auss. Zweifl. Ins., v. 2, p. 462.

DISTRIBUTION.—2 ♂♂, 3 ♀♀, North Bimini Island; July 1951 (P. & C. Vaurie); 1 ♀, South Bimini Island; 20–31 July 1951 (P. & C. Vaurie). Widespread throughout the New World.

Euxesta quadrivittata (Macquart)

Urophora quadrivittata Macquart, 1835, Hist. Nat. Ins., Dipt. II: 456.

Euxesta quadrivittata; Steyskal, 1952, Bernice P. Bishop Mus. Occas. Papers 20 (15): 280.

DISTRIBUTION.—Abaco Cays: 2 ♂♂, Allen's Cay, 9 May 1953; 1 ♂, 1 ♀, Great Sale Cay, 10 May 1953; 1 ♂, Green Turtle Cay, 7 May 1953; Andros Island: 1 ♂, Lisbon Creek (near South Bight), 28 April 1953; 1 ♀, Mangrove Cay, 19 June 1924 (C. E. Olson); 1 ♀, Frazier's Hog Cay, Berry Islands; 30 May 1953; Cat Island: 1 ♀, The Bight, 22 March 1953; 1 ♀, McQueen, 23 March 1953; 1 ♂, 1 ♀, Staniard Cay, Exuma Cays; 13 January 1953; 1 ♂, March Harbour (at light), Great Abaco Island; 6 May 1953; 2 ♂♂, 12 mi. N. Matthew Town, Great Inagua Island; 29 January 1953; 2 ♀♀, Deadman's Cay, Long Island; 11 March 1953; 1 ♀, North Bimini Island; July 1951 (P. & C. Vaurie); 1 ♀, near Port Nelson, Rum Cay: 16 March 1953; 1 ♂, near Cockburn Town, San Salvador Island; 18 March 1953; 1 ♀, Long Cay, so. of Grand Turk Island, 25 February 1953.

Originally described from Cuba, this species is now known to extend from Guatemala to Chile and into the West Indies. According to Steyskal it also occurs in Fiji, Guam, the Philippine Islands and Hawaii.

Euxesta quaternaria Loew

Euxesta quaternaria Loew, 1867, Berl. Ent. Ztschr. 11: 302, pl. II, fig. 11; Curran, 1935, Amer. Mus. Novit., No. 812, p. 11 (in key only).

DISTRIBUTION.—1 ♂, Nassau, New Providence Island; 16 April 1953; 2 ♂♂, 2 ♀♀, North Bimini Island; May 1951 (M. Cazier, W. Gertsch).

Previously recorded from United States (Florida), Puerto Rico and St. Thomas (Virgin Islands). The U. S. National Museum collection contains specimens from Cuba, Jamaica, Panama Canal Zone and United States (Texas).

Euxesta scoriacea Loew

Euxesta scoriacea Loew, 1876, Ztschr. Ges. Naturwiss., p. 336.

DISTRIBUTION.—Florida, Louisiana, Massachusetts, New Jersey, Texas.

PREVIOUS BAHAMA ISLANDS RECORDS.—None.

NEW BAHAMA ISLANDS RECORDS.—East Bimini Island: 1 ♀, June 1951 (P. & C. Vaurie).

Euxesta stigmatias Loew

Euxesta stigmatias Loew, 1867, Berl. Ent. Ztschr. 11: 310, pl. 2, fig. 18; Curran, 1935, Amer. Mus. Novit., No. 812, p. 10 (in key only).

DISTRIBUTION.—4 ♂♂, 3 ♀♀, Staniard Cay, Exuma Cays; 13 January 1953; Long Island: 10 ♂♂, 6 ♀♀, Clarence Town (at light), 13 March 1953; 3 ♂♂, 7 ♀♀, Deadman's Cay, 11 March 1953; 1 ♂, near Abraham Bay, Mayaguana Island; 3 March 1953; 1 ♀, near Cockburn Town, San Salvador Island; 18 March 1953.

This widespread species occurs from northern Mexico to Brazil and throughout the West Indies east to St. Vincent.

Eumetopiella varipes (Loew)

Eumetopia varipes Loew, 1865, Dipt. Amer Sept. Ind., Cent. 6, p. 181 *in* Berl. Ent. Ztschr. 9: 55.

Eumetopiella varipes; Hendel, 1907, Wien. Ent. Ztg. 26: 98.

DISTRIBUTION.—1 ♀, Allen's Cay, Abaco Cays; 9 May 1953; Andros Island: 1 ♂, 1 ♀, Fresh Creek, 23 April 1953; 1 ♂, Mangrove Cay, 26 April 1953; 1 ♀, New Portsmouth (Rock Sound), Eleuthera Island; 28 March 1953; 2 ♀♀, Alicetown, North Bimini Island; 30 December 1952; 4 ♂♂, 1 ♀, near Cockburn Town, San Salvador Island; 18 March 1953.

Originally described from Cuba, this species is represented by United States specimens in the collection of the U. S. National Museum from Texas, Mississippi and Florida.

Stenomyia tenuissima (Hendel)

Euxesta tenuissima Hendel, 1910, Dipt. Fam. Muscaridae, Sfam. Ulidiinae *in* Wytsman, Gen. Ins. Fasc. 106: 28; pl. 2, fig. 43.

DISTRIBUTION.—Great Bahama Island: 1 ♀, Pine Ridge, 13 May 1953; 2 ♂♂, West End, 12 May 1953.

There are two specimens in the U. S. National Museum collection from Cuba, and several United States localities as far west as North Dakota are also represented.

Acrosticta apicalis (Williston)

Euxesta apicalis Williston, 1896, Trans. Ent. Soc. Lond., p. 375, pl. 12, fig. 128.

Acrosticta apicalis; Steyskal, 1952, Bernice P. Bishop Mus. Occas. Papers 20 (15): 279.

DISTRIBUTION.—1 ♀, Lerner Marine Lab., Bimini Island, 27 July 1947; 1 ♂, 1 ♀, Staniard Cay, Exuma Cays, 13 January 1953; 1 ♀, South Bimini Island; 2–9 August 1951 (C. & P. Vaurie).

The species occurs in North, Central, and South America, the West Indies, Hawaii, Fiji, Samoa, Marquesas and Society Islands, Guam, Saipan, and Nouru Island (west of the Gilbert Islands).

Notogramma purpurata Cole

Notogramma purpurata Cole, 1923, Proc. Calif. Acad. Sci. 12: 474.

DISTRIBUTION.—1 ♀, Staniard Cay, Exuma Cays, 13 January 1953; 1 ♀, Matthew Town, Great Inagua Island; 31 January 1953.

This species was originally described from Idaho and has been recorded from Texas and the "Gulf of California." Specimens in the U. S. National Museum are from Mexico, El Salvador, Jamaica, and Cuba.

Herina narytia (Walker)

Trypeta narytia Walker, 1849, Ins. Brit. Mus. 4: 1020.

Herina narytia; McAlpine, 1951, Can. Ent. 83 (11): 310; figs. 1a-d.

DISTRIBUTION.—1 ♂, Marsh Harbour (at light), Great Abaco Island; 6 May 1953; 7 ♂♂, 2 ♀♀, Cays 3.5 mi. SW of North Caicos Island, 28 February 1953.

Recorded by McAlpine from New Hampshire, Maryland, Georgia, and Florida. Specimens in the U. S. National Museum are from New York and New Jersey.